

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/535,571
Source: PCT
Date Processed by STIC: 5-27-05

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 05/27/2005

PATENT APPLICATION: US/10/535,571

TIME: 10:55:52

Input Set : A:\EX03-089C-US patentin.txt

Output Set: N:\CRF4\05272005\J535571.raw

3 <110> APPLICANT: EXELIXIS, INC.

5 <120> TITLE OF INVENTION: MAPKs AS MODIFIERS OF THE RAC, AXIN, AND BETA-CATENIN

PATHWAYS

6 AND METHODS OF USE

8 <130> FILE REFERENCE: EX03-089C-US

C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/535,571

C--> 10 <141> CURRENT FILING DATE: 2005-05-19

10 <150> PRIOR APPLICATION NUMBER: US 60/429,061

11 <151> PRIOR FILING DATE: 2002-11-25

13 <150> PRIOR APPLICATION NUMBER: US 60/437,163

14 <151> PRIOR FILING DATE: 2002-12-30

16 <160> NUMBER OF SEQ ID NOS: 40

18 <170> SOFTWARE: PatentIn version 3.2

20 <210> SEQ ID NO: 1

21 <211> LENGTH: 3855

22 <212> TYPE: DNA

23 <213> ORGANISM: Homo sapiens

25 <400> SEQUENCE: 1

(pg. 6)

26	aggtagaaga	acggtcaagg	ctcaaccggc	aaagttcccc	tgccatgcct	cacaaggttg	60
28	ccaacaggat	atctgacccc	aacctgcccc	caaggtcggg	gtccttcagc	attagtggag	120
30	ttcagcctgc	tgaacacccc	cccagctcga	gaccagtcga	tccccagatc	ccacatctgg	180
32	tagctgtaaa	atcccaggga	cctgccttga	ccgcctccca	gtcagtgcac	gagcagccca	240
34	caaagggcct	ctctggggtt	caggaggctc	tgaacgtgac	ctcccaccgc	gtggagatgc	300
36	cacgccagaa	ctcagatccc	acctcggaaa	atcctcctct	ccccactcgc	attgaaaagt	360
38	ttgaccgaag	ctcttgggta	cgacaggaag	aagacattcc	accaaagggtg	cctcaaagaa	420
40	caacttctat	atcccagcga	ttagccagaa	agaattctcc	tgggaatggt	agtgtctctg	480
42	gaccagact	aggatctcaa	cccatcagag	caagcaaccc	tgatctccgg	agaactgagc	540
44	ccatcttggg	gagccccttg	cagaggacca	gcagtgccag	ttcctccagc	tccagcacc	600
46	ctagctccca	gcccagctcc	caaggaggct	cccagcctgg	atcacaagca	ggatccagt	660
48	aacgcaccag	agttcgagcc	aacagtaagt	cagaaggatc	acctgtgctc	ccccatgagc	720
50	ctgcgaaggt	gaaaccagaa	gaatccagg	acattaccgc	gcccagtcga	ccagctagct	780
52	acaaaaaagc	tatagatgag	gatctgacgg	cattagccaa	agaactaaga	gaactccgga	840
54	ttgaagaaac	aaaccgcccc	atgaagaagg	tgactgatta	ctcctcctcc	agtgaggagt	900
56	cagaaagttag	cgaggaagag	gaggaagatg	gagagagcga	gacccatgat	gggacagtgg	960
58	ctgtcagcga	catacccgaa	ctgataccaa	caggagctcc	aggcagcaac	gagcagtaca	1020
60	atgtgggaat	ggtggggacg	catgggctgg	agacctctca	tgccggacagt	ttcagcggca	1080
62	gtatttcaag	agaaggaacc	ttgatgatta	gagagacgtc	tggagagaag	aagcgatctg	1140
64	gccacagtga	cagcaatggc	tttgtgggcc	acatcaacct	ccctgacctg	gtgcagcaga	1200
66	gccattctcc	agctggaacc	ccgactgagg	gactggggcg	cgtctcaacc	cattcccagg	1260
68	agatggactc	tgggactgaa	tatggcatgg	ggagcagcac	caaagcctcc	ttcaccctcc	1320
70	ttgtggaccc	cagagtatac	cagacgtctc	ccactgatga	agatgaagag	gatgaggaat	1380
72	catcagccgc	agctctgttt	actagcgaac	ttcttaggca	agaacaggcc	aaactcaatg	1440
74	aagcaagaaa	gatttcgggtg	gtaaatgtaa	acccaaccaa	cattcggcct	catagcgaca	1500
76	caccagaaat	cagaaaatac	aagaaacgat	tcaactcaga	aatactttgt	gcagctctgt	1560

RAW SEQUENCE LISTING

DATE: 05/27/2005

PATENT APPLICATION: US/10/535,571

TIME: 10:55:52

Input Set : A:\EX03-089C-US patentin.txt

Output Set : N:\CRF4\05272005\J535571.raw

```

78 ggggtgtaaa ccttctggtg gggactgaaa atggcctgat gcttttggac cgaagtgggc 1620
80 aaggcaaagt ctataatctg atcaaccgga ggcgatttca gcagatggat gtgctagagg 1680
82 gactgaatgt ccttgtgaca atttcaggaa agaagaataa gctacgagtt tactatcttt 1740
84 catggttaag aaacagaata ctacataatg acccagaagt agaaaagaaa caaggctgga 1800
86 tctactgttg ggacttgga ggctgtatac attataaagt tgtaaataat gaaaggatca 1860
88 aattttttgg gattgcctta aagaatgctg tggaaatata tgcttgggct cctaaaccgt 1920
90 atcataaatt catggcattt aagtcttttg cagatctcca gcacaagcct ctgctagtgt 1980
92 atctcacggt agaagaaggt caaagattaa aggttatttt tggttcacac actggtttcc 2040
94 atgtaattga tgttgattca ggaaactctt atgatattca cataccatct catattcagg 2100
96 gcaatatcac tcctcatgct attgtcatct tgcctaaaac agatggaatg gaaatgcttg 2160
98 tttgctatga ggatgagggg gtgtatgtaa acacctatgg ccggataact aaggatgtgg 2220
100 tgctccaatg gggagaaatg cccacgtctg tggcctacat tcattccaat cagataatgg 2280
102 gctggggcga gaaagctatt gagatccggt cagtggaaac aggacatttg gatggagtat 2340
104 ttatgcataa gcgagctcaa aggttaaagt ttctatgtga aagaaatgat aaggtatttt 2400
106 ttgcatccgt gcgatctgga ggaagtagcc aagtgttttt catgaccctc aacagaaatt 2460
108 ccatgatgaa ctggtaacag aagagcactt ggcacttatc ttcatggcgt tatttctaatt 2520
110 ttaaaagaac ataactcatg tggacttatg ccagtctaga ggcagaatca gaaggcttgg 2580
112 ttgaacatat cgctttccct ttttcctctc cctccgcccc tcccagtaca gtccatcttt 2640
114 caatgttgca gcctggttga gaaggagaga aaaagggtggc aggaatttcc aggagatccc 2700
116 caagaatgct gccttgtctg tggacaaaga tggaccatgt gcccttcgga attagggata 2760
118 gaaacaaata ttgtgtgctc ttaacgatta agctgtgtta tgggtgggtt tcagggtttt 2820
120 accttttttc tttaccctt tactctgcaa gaatggggaa agaatgcata ctgcgaaaat 2880
122 gagtctttta aattctgtct gcctactagt ttaagtata tggatgttg taaaatttcc 2940
124 aatgatgaga gacagcaca taaatgtacc ttatctcctt aggtgaagg ccataactac 3000
126 atagtggagt aatttaagaa ctctcttgcc ttcaccaacc caaaagggtg ctttttgata 3060
128 gcaactggct aatgaatttt taaaaagaga agaaaaatac tagttttccc ctcttttggg 3120
130 aaatagattt taaatggcta aactactagc cttaaaacta ctagtctaatt aaaatcaact 3180
132 accacttttg tgaatctgac aggccacatt tttatatggc cctttacaga atggagtgtg 3240
134 ttgaacagga tactaacgcc attgagttga gctggcctag cgatggaggg acactctaac 3300
136 acaactttcc ctgagctatt atgcaacaga tcagggaaaa agatgggatg acagatgggg 3360
138 tcagacagaa agagcttctg ggaacaagc ttacatagtc ttttttaaaa tgcacaaagc 3420
140 ctcccagta agaggtcact tggtttgggc ttcattagga ctgagacttt gttgagttct 3480
142 ttctgggact tggagagtgg atgatattca ggctctgaac attcccagcg ctctcccag 3540
144 ggtgccactt tctcaagatg aaaactgtga ctgaaaaaat taataataaa tgtttctgag 3600
146 ctgcctgtgt tctccctgtg tgggtgagag aagggactag actcctaagc ctgcctcaga 3660
148 tacaagaggc atcattggct ccaattttag agaacttgaa agcaaggctt tggacaaaat 3720
150 tttgagacct taatcacttt accttctcc aaattaccca acatacggta aacaacattt 3780
152 gtgcagaagt atgtatgtat ttagttcagg ttgacttggt tccttataaa ctcttactca 3840
154 aatgatttga acttt 3855
157 <210> SEQ ID NO: 2
158 <211> LENGTH: 5727
159 <212> TYPE: DNA
160 <213> ORGANISM: Homo sapiens
162 <400> SEQUENCE: 2
163 cgcccttagc cgatcggggc gctcagccca cacgcaccgc tgctcggggc ttggagatcc 60
165 gcgcaggctg ggctcccgga cgcgccggac cgacgcgcgg aggatcgga tccggcgctg 120
167 tggggctggg gtggcgggg gaggtgggc ccggggcctc tggcgcgaca cccgcatgag 180
169 gacgcgagtg aaatagacca aggtggaatt tccaagggaa aagcttcggg gtggttttgg 240
171 tccatttctc cagcgaagaa gtagacatgg cgagcgactc cccggctcga agcctggatg 300

```

RAW SEQUENCE LISTING

DATE: 05/27/2005

PATENT APPLICATION: US/10/535,571

TIME: 10:55:52

Input Set : A:\EX03-089C-US patentin.txt

Output Set : N:\CRF4\05272005\J535571.raw

173	aaatagatct	ctcggctctg	agggaccctg	cagggatctt	tgaattggtg	gaacttggtg	360
175	gaaatggaac	atacgggcaa	gtttataagg	gtcgtcatgt	caaaacgggc	cagcttgcat	420
177	ccatcaaggt	tatggatgtc	acaggggatg	aagaggaaga	aatcaaaca	gaaattaaca	480
179	tggtgaagaa	atattctcat	caccggaata	ttgctacata	ctatggtgct	tttatcaaaa	540
181	agaaccacc	aggcatggat	gaccaacttt	ggttggtgat	ggagttttgt	ggtgctggct	600
183	ctgtcaccga	cctgatcaag	aacacaaaag	gtaacacgtt	gaaagaggag	tggattgcat	660
185	acatctgcag	ggaaatctta	cgggggctga	gtcacctgca	ccagcataaa	gtgattcatc	720
187	gagatattaa	agggcaaaat	gtcttgctga	ctgaaaatgc	agaagttaa	ctagtggact	780
189	ttggagtcag	tgctcagctt	gatcgaacag	tgggcaggag	gaataactttc	attggaactc	840
191	cctactggat	ggcaccagaa	gttattgcct	gtgatgaaaa	ccagatgcc	acatatgatt	900
193	tcaagagtga	cttgtggtct	ttgggtatca	ccgccattga	aatggcagaa	ggtgctcccc	960
195	ctctctgtga	catgcacccc	atgagagctc	tcttctcat	cccccggaat	ccagcgcctc	1020
197	ggctgaagtc	taagaagtgg	tcaaaaaaat	tccagtcatt	tattgagagc	tgcttggtaa	1080
199	agaatcacag	ccagcgacca	gcaacagaac	aattgatgaa	gcatccattt	atacgagacc	1140
201	aacctaata	gcgacaggtc	cgcattcaac	tcaaggacca	tattgataga	acaaagaaga	1200
203	agcgaggaga	aaaagatgag	acagagtatg	agtacagtgg	aagtgaggaa	gaagaggagg	1260
205	agaatgactc	aggagagccc	agctccatcc	tgaatctgcc	aggggagtcg	acgctgcgga	1320
207	gggactttct	gaggctgcag	ctggccaaca	aggagcgttc	tgaggcccta	cggaggcagc	1380
209	agctggagca	gcagcagcgg	gagaatgagg	agcacaagcg	gcagctgctg	gccgagcgtc	1440
211	agaagcgcag	cgaggagcag	aaagagcaga	ggcggcggtc	ggaggagcaa	caaaggcgag	1500
213	agaaggagct	gcggaagcag	caggagaggg	agcagcgccg	gcactatgag	gagcagatgc	1560
215	gccgggagga	ggagaggagg	cgtgcggagc	atgaacagga	atacatcagg	cgacagttag	1620
217	aggaggagca	gagacagtta	gagatcttgc	agcagcagct	actgcatgaa	caagctctac	1680
219	ttctggaata	taagcgcaaa	caattggaag	aacagagaca	agcagaaaga	ctgcagaggc	1740
221	agctaaagca	agaaaagagac	tacttagttt	cccttcagca	tcagcggcag	gagcagaggc	1800
223	ctgtggagaa	gaagccactg	taccattaca	aagaaggaaat	gagtccctagt	gagaagccag	1860
225	catgggcaa	ggaggtagaa	gaacgggtcaa	ggctcaaccg	gcaaagttcc	cctgccatgc	1920
227	ctcacaaggt	tgccaacagg	atatctgacc	ccaacctgcc	cccaaggctc	gagtccttca	1980
229	gcattagtgg	agttcagcct	gtcgaacac	cccccatgct	cagaccagtc	gatccccaga	2040
231	tcccacatct	ggtagctgta	aaatcccagg	gacctgcctt	gaccgcctcc	cagtcagtgc	2100
233	acgagcagcc	cacaaagggc	ctctctgggt	ttcaggaggc	tctgaacgtg	acctcccacc	2160
235	gcgtggagat	gccacgccag	aactcagatc	ccactcggga	aaatcctcct	ctcccactc	2220
237	gcattgaaaa	gtttgacga	agctcttggt	tacgacagga	agaagacatt	ccaccaaaag	2280
239	tgctcaaaag	aacaacttct	atatccccag	cattagccag	aaagaattct	cctgggaatg	2340
241	gtagtgtctt	gggacccaga	ctaggatctc	aacccatcag	agcaagcaac	cctgatctcc	2400
243	ggagaactga	gcccaccttg	gagagcccct	tgacagaggac	cagcagtggc	agttcctcca	2460
245	gctccagcac	ccctagctcc	cagcccagct	cccaaggagg	ctcccagcct	ggatcacaag	2520
247	caggatccag	tgaacgcacc	agagtctcag	ccaacagtaa	gtcagaagga	tcacctgtgc	2580
249	ttccccatga	gcctgccaag	gtgaaaccag	aagaatccag	ggacattacc	cggcccagtc	2640
251	gaccagctag	ctacaaaaaa	gctatagatg	aggatctgac	ggcattagcc	aaagaactaa	2700
253	gagaactccg	gattgaagaa	acaaaccgcc	caatgaagaa	ggtgactgat	tactcctcct	2760
255	ccagtgaagga	gtcagaaaag	agcgaggaag	aggaggaaga	tggagagagc	gagacccatg	2820
257	atgggacagt	ggctgtcagc	gacataccca	gactgatacc	aacaggagct	ccaggcagca	2880
259	acgagcagta	caatgtggga	atggtgggga	cgcattgggt	ggagacctct	catgaggaca	2940
261	gtttcagcgg	cagtatttca	agagaaggaa	ccttgatgat	tagagagacg	tctggagaga	3000
263	agaagcgatc	tgccacagct	gacagcaatg	gctttgctgg	ccacatcaac	ctccctgacc	3060
265	tggtgcagca	gagccattct	ccagctggaa	ccccgactga	gggactgggg	cgcgtctcaa	3120
267	ccattccca	ggagatggac	tctgggactg	aatatggcat	ggggagcagc	accaaagcct	3180
269	ccttcacccc	ctttgtggac	cccagagtat	accagacgtc	tcccactgat	gaagatgaag	3240

RAW SEQUENCE LISTING

DATE: 05/27/2005

PATENT APPLICATION: US/10/535,571

TIME: 10:55:52

Input Set : A:\EX03-089C-US patentin.txt

Output Set: N:\CRF4\05272005\J535571.raw

```

271 aggatgagga atcatcagcc gcagctctgt ttactagcga acttcttagg caagaacagg 3300
273 ccaaaactcaa tgaagcaaga aagatttcgg tggtaaagt aaacccaacc aacattcggc 3360
275 ctcatagcga cacaccagaa atcagaaaat acaagaaacg attcaactca gaaatacttt 3420
277 gtgcagctct gtgggggtgta aaccttctgg tggggactga aaatggcctg atgcttttgg 3480
279 accgaagtgg gcaaggcaaa gtctataatc tgatcaaccg gaggcgattt cagcagatgg 3540
281 atgtgctaga gggactgaat gtccttgatg caatttcagg aaagaagaat aagctacgag 3600
283 tttactatct ttcattggtta agaaacagaa tactacataa tgaccagaa gtagaaaaga 3660
285 aacaaggctg gatcactgtt ggggacttgg aaggctgtat acattataaa gttgttaaat 3720
287 atgaaaggat caaatttttg gtgattgcct taaagaatgc tgtggaaata tatgcttggg 3780
289 ctctaaacc gtatcataaa ttcatggcat ttaagtcttt tgcagatctc cagcacaagc 3840
291 ctctgctagt tgatctcacg gtagaagaag gtcaaagatt aaaggttatt tttggttcac 3900
293 aactgggttt ccatgtaatt gatgttgatt caggaaactc ttatgatatc tacataccat 3960
295 ctcatattca gggcaataatc actcctcatg ctattgtcat cttgcctaaa acagatggaa 4020
297 tggaaatgct tgtttgctat gaggatgagg ggggtgatgt aaacacctat ggcggataa 4080
299 ctaaggatgt ggtgtccaa tggggagaaa tgcccacgtc tgtggcctac attcattcca 4140
301 atcagataat gggctggggc gagaaagcta ttgagatccg gtcagtggaa acaggacatt 4200
303 tggatggagt atttatgcat aagcgagctc aaaggttaaa gtttctatgt gaaagaaatg 4260
305 ataaggattt ttttgcattc gtgcgatctg gaggaaatag ccaagtgttt ttcattgacc 4320
307 tcaacagaaa ttccatgatg aactggtaac agaagagcac ttggcactta tcttcatggc 4380
309 gttattttcta atttaaaaga acataactca tgtggactta tgccagtcta gaggcagaat 4440
311 cagaaggctt ggttgaacat atcgctttcc ctttttctc tccctccgcc cctcccagta 4500
313 cagtcctatc ttcaatgttg cagcctggtt gagaaggaga gaaaaagggt gcaggaattt 4560
315 ccaggagatc cccaagaatg ctgccttgct tgtggacaaa gatggaccat gtgcccttcg 4620
317 gaattagga tagaaacaaa tattgtgtgc tcttaacgat taagctgtgt tatggtgggt 4680
319 tttcagggtt ttaccttttt tctttacccc tttactctgc aagaatgggg aaagaatgca 4740
321 tactgcgaaa atgagtcctt taaattctgt ctgcctacta gttttaagta tatggtatgt 4800
323 tgtaaaattt ccaatgatga gagacagcac aataaatgta ccttatctcc ttaggctgaa 4860
325 ggccataact acatagtggg gtaatttaag aactctcttg ccttcaccaa cccaaaagg 4920
327 tgctttttga tagcaactgg ctaatgaatt tttaaaaaga gaagaaaaat actagttttc 4980
329 ccctcttttg ggaaatagat tttaaatggc taaactacta gccttaaaac tactagtcta 5040
331 ataaaatcaa ctaccacttt tgtgaatctg acaggccaca tttttatatg gccctttaca 5100
333 gaatggagt tgttgaacag gatactaacg ccattgagtt gagctggcct agcgatggag 5160
335 ggacactcta acacaacttt ccctcagcta ttatgcagaa gatcagggaa aaagatggga 5220
337 tgacagatgg ggtcagacag aaagagcttc tgggaaacaa gcttacatag tcttttttaa 5280
339 aatgcacaaa gcctcccagc taagaggtca cttggttttg gcttcattag gactgagact 5340
341 ttgttgagtt ctttctggga cttggagagt ggatgatatt caggctctga acattcccag 5400
343 cgctctcccg aggggtgccac tttctcaaga tgaaaactgt gactgaaaaa attaataata 5460
345 aatgtttctg agctgcctgt gttctccctg tgtgggtgag agaagggact agactcctaa 5520
347 gcctgcctca gatacaagag gcatcattgg ctccaatttt agagaacttg aaagcaaggc 5580
349 tttggacaaa attttgagac cctaatactt ttaccttct ccaaattacc caacatacgg 5640
351 taaacaacat ttgtgcagaa gtatgtatgt atttagttca ggttgacttg tgtccttata 5700
353 aactcttact caaatgattt gaacttt 5727
356 <210> SEQ ID NO: 3
357 <211> LENGTH: 1084
358 <212> TYPE: DNA
359 <213> ORGANISM: Homo sapiens
361 <400> SEQUENCE: 3
362 tcacatctgt gcctaaggct cctattgaca aggactctct gcattaggta gtaaataact 60
364 agatgtatga atgctgctaa ctttataaaa gaaaactgta atttcattac cagaagtaca 120

```

RAW SEQUENCE LISTING

DATE: 05/27/2005

PATENT APPLICATION: US/10/535,571

TIME: 10:55:52

Input Set : A:\EX03-089C-US patentin.txt

Output Set: N:\CRF4\05272005\J535571.raw

```

366 atgatttaaat tattatgtca gagcttctac attcattagt ttatatattac ctacttgccc 180
368 attagtgtat atttacaagt cacagtttct taaattttat agggactctc gatgcagaag 240
370 attaaagttc atgaaaagtc agtcttaggg tgcttcttaa atttacaggt gtaaaccttc 300
372 tgggtggggac tgaaaatggc ctgatgcttt tggaccgaag tgggcaaggc aaagtctata 360
374 atctgatcaa ccggaggcga tttcagcaga tggatgtgct agagggactg aatgtccttg 420
376 tgacaatttc aggaaagaag aataagctac gagtttacta tctttcatgg ttaagaaaca 480
378 gaatactaca taatgaccca gaagtagaaa agaaacaagg ctggatcact gtgggggact 540
380 tggaaggctg tatacattat aaagttgtta aatatgaaag gatcaaattt ttggtgattg 600
382 ccttaaagaa tgctgtggaa atatatgctt gggctcctaa accgtatcat aaattcatgg 660
384 catttaagtc ttttgcagat ctccagcaca agcctctgct agttgatctc acggtagaag 720
386 aagggtcaaag attaaagggt atttttgggt cacacactgg tttccatgta attgatgttg 780
388 attcaggaag ctcttatgat atctacatac catctcatac tcagggaat atcactcctc 840
390 atgctattgt catcttgctt aaaacagatg gaatggaaat gcttggttgc tatgaggatg 900
392 aggggggtga tgtaaacacc tatggccgga taactaagga tgtggtgctc caatggggag 960
394 aaatgcccac gtctgtgggt aggttaacca ttccttatct ccttcagcag ttacaccccc 1020
396 caaatgaaac gaaaatcaag aaatgtgaaa caaccatttg attccacaaa aaaaaaaaaa 1080
398 aaaa 1084
401 <210> SEQ ID NO: 4
402 <211> LENGTH: 3918
403 <212> TYPE: DNA
404 <213> ORGANISM: Homo sapiens
406 <400> SEQUENCE: 4
407 atggcgagcg actccccggc tcgaagcctg gatgaaatag atctctcggc tctgagggac 60
409 cctgcagggg tctttgaatt ggtggaactt gttggaaatg gaacatacgg gcaagtttat 120
411 aagggtcgtc atgtcaaaac gggccagctt gcagccatca aggttatgga tgtcacaggg 180
413 gatgaagagg aagaaatcaa acaagaaatt aacatgttga agaaatattc tcatcacagg 240
415 aatattgcta catactatgg tgctttttatc aaaaagaacc caccaggcat ggatgaccaa 300
417 ctttggttgg tgatggagtt ttgtggtgct ggctctgtca ccgacctgat caagaacaca 360
419 aaaggtaaac cgttgaaaga ggagtggatt gcatacatct gcagggaat cttacggggg 420
421 ctgagtcacc tgcaccagca taaagtgatt catcgata ttaaagggca aaatgtcttg 480
423 ctgactgaaa atgcagaagt taaactagtg gactttggag tcagtgtcga gcttgatcga 540
425 acagtgggca ggaggaatac tttcattgga actccctact ggatggcacc agaagttatt 600
427 gcctgtgatg aaaaccaga tgccacatat gatttcaaga gtgacttgtg gtctttgggt 660
429 atcaccgcca ttgaaatggc agaaggtgct cccctctct gtgacatgca ccccatgaga 720
431 gctctcttcc tcatcccccg gaatccagcg cctcggctga agtctaagaa gtggtcaaaa 780
433 aaattccagt catttattga gagctgcttg gtaaagaatc acagccagcg accagcaaca 840
435 gaacaattga tgaagcatcc atttatacga gaccaaccta atgagcgaca ggtccgcatt 900
437 caactcaagg accatattga tagaaciaag aagaagcgag gagaaaaaga tgagacagag 960
439 tatgagtaca gtggaagtga ggaagaagag gaggagaatg actcaggaga gccagctcc 1020
441 atcctgaatc tgccagggga gtcgacgctg cggagggact ttctgaggct gcagctggcc 1080
443 aacaaggagc gttctgaggc cctacggagg cagcagctgg agcagcagca gcgggagaat 1140
445 gaggagcaca agcggcagct gctggccgag cgtcagaagc gcacgagga gcagaaagag 1200
447 cagaggcggc ggctggagga gcaacaaagg cgagagaagg agctgcgga gcagcaggag 1260
449 agggagcagc gccggcacta tgaggagcag atcgccggg aggaggagag gaggcgtgctg 1320
451 gagcatgaac aggaatacat caggcgacag tttagaggag agcagagaca gttagagatc 1380
453 ttgcagcagc agctactgca tgaacaagct ctacttctgg aatataagcg caaacaattg 1440
455 gaagaacaga gacaagcaga aagactgcag aggcagctaa agcaagaaag agactactta 1500
457 gttcccttc agcatcagcg gcaggagcag aggcctgtgg agaagaagcc actgtacct 1560
459 tacaagaag gaatgagtc tagtgagaag ccagcatggg ccaaggagat cccacatctg 1620

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/535,571

DATE: 05/27/2005
TIME: 10:55:53

Input Set : A:\EX03-089C-US patentin.txt
Output Set: N:\CRF4\05272005\J535571.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:30; N Pos. 507

Seq#:35; N Pos. 376,378

VERIFICATION SUMMARY

DATE: 05/27/2005

PATENT APPLICATION: US/10/535,571

TIME: 10:55:53

Input Set : A:\EX03-089C-US patentin.txt

Output Set: N:\CRF4\05272005\J535571.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application No

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:3775 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:480

L:4593 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:360